

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

The specification has been amended to correct a typographical error in a US patent number.

Claims 1-46 are pending in this application. Claims 1 and 40 have been amended. Claims 47-61 have been added. Claims 32-33 and 36-39 have been canceled.

Claim 1 has been amended to add the limitation wherein no significant amount of zirconium compound is added to the aqueous suspension of titanium dioxide base material." Support for this change is found in the specification at p5 lines 1-2 and in claim 44.

The office action states that Claims 32-33 and 36-39 are objected to Section 37 CFR 1.75(c) as being of improper dependent form. These claims have been canceled, and have been rewritten as new dependent claims 47-50 of the pigment material claim 40.

The office action states that Claims 32-33, 36-40 and 44-45 are rejected under Section 35 U.S.C. 112 second paragraph, as being indefinite. Claims 32-33 and 36-39 have been canceled. Claim 40 has been amended to remove the words "a very large plurality of" from the claim. Claim 40 is thus allowable under 35 U.S.C. 112 second paragraph.

Applicant states that "Insignificant amount" in claim 44 means for the person skilled in the art an amount which does not modify the properties of the material (here: the optical, stability and processing properties of the pigment). Zr was not added on purpose - to influence the properties - during the method (post treatment procedure). It may be present due to an impurity contained either in the TiO₂ particle (which is derived from natural ore) or in the chemical compounds added. Since the words "insignificant amount" are understood in the art, claim 44 is allowable under 35 U.S.C. 112 second paragraph.

New claim 51 is old claim 7 with all limitations of its parent claims added, and has thus been rendered allowable as noted by Examiner.

New claims 52-61 are old claims 17-22 and 25-31, with all limitations of their parent claims added, and have thus been rendered allowable as noted by Examiner. (Old claim 29 was not included in the allowability notice, but it is dependent on a claim which would be allowable,

if amended)

The office action states that Claims 1-6, 8-16, 23-24, 29, and 34-35 are rejected under Section 35 U.S.C. 103(a) as being unpatentable over Losoi US 5,165,995.

Losoi teaches the manufacture of TiO₂ pigments for paints and plastics (col. 3, lines 52/53) with improved weather resistance and gloss. In contrast, the present invention teaches the manufacture of a TiO₂ pigment for laminating paper with improved greying resistance, opacity and retention.

Weatherability means resistance to chalking which is caused by the oxidation of the binder of the paint or plastic at the surface of the TiO₂ particles due to photocatalytic activity of TiO₂ (formation of electrons and holes which migrate to the particles surface). Zr helps to build up a coating (barrier layer) which prevents these oxidation reactions.

The greying on the other hand is caused by the reduction of Ti⁴⁺ to Ti³⁺ (which is grey) due to UV radiation and the measures in posttreating a laminate pigment aim in the re-formation of (colourless) Ti⁴⁺. The problem is a different problem. One of ordinary skill in the art would not think to apply the solution to Losoi's problem of degradation of the pigment binder to the problem of greying.

Losoi teaches the addition of Ti-, P- and Zr-compounds in the acidic range, then neutralisation by means of a lye: thus all additions precipitate, i.e. Ti-phosphate and Zr-oxide (see col. 3, lines 1-24). Only after that Al is added and then a separate continuous Al-oxide layer is precipitated. Thus it is not possible to produce an Al-phosphate layer because all phosphate has already been precipitated from the slurry. This will be understood at once by anyone skilled in the art!

We teach the addition of P-, Ti- and Al-compounds, and only then by means of the addition of the Al-compound(s) neutralisation takes place. So the P-, Ti- and Al-compounds precipitate more or less together, at least not in separate continuous layers. The addition of Ti-sulfate lowers the pH to about 2 or less thus all compounds are in the dissolved state at that moment. Only when the pH reaches the neutral range (about > 6) will the compounds Ti-phosphate, Al-phosphate and possibly Al-oxide (dependant on the amount of Al and P added) precipitate.

Since the prior art cited does not suggest

"A method for producing a pigment, comprising:

a) adding a phosphorus compound to an aqueous suspension of titanium dioxide base material,
then

b) adding a titanium compound; and

c) adding an aluminum compound,

wherein no significant amount of zirconium compound is added to the aqueous suspension of
titanium dioxide base material."

claim 1 is allowable .

Claims 2-31 and 34-35, dependent on claim 1 are allowable since they are dependent on an allowable base claim. In addition, claims 2-31 and 34-35 are separately inventive over claim 1 and are thus additionally allowable. Claim 40, as amended, has been held to be allowable with the correction of an indefinite construction. Claims 41-50, dependent on claim 40, are thus allowable. In addition, claims 41-50 are separately inventive over claim 40 , and are thus additionally allowable. New independent and dependent claims 51-61 have been held allowable as they are written to include all limitations of their parent claims.

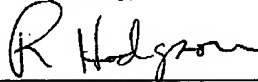
An additional fee of $\$264 + \$162 = \$426$ is required for 3 extra independent and 9 extra total claims more than 20. The required fees and any insufficiency or overage (except issue fees) may be debited or credited to deposit account 08/2240. A signed deposit account authorization is on file for this case.

On the basis of the above amendments and remarks, reconsideration of this application and its early allowance is respectfully requested.

CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 CFR 1.8(a) and (b), 37CFR 1.86(f)-

I hereby certify that the following attached correspondence comprising Response and Amendment is being sent by facsimile transmission to FAX NUMBER 703-872-9306 on November 9, 2004.

Respectfully,



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